

AMENDMENTS TO THE CLAIMS

Listing of Claims:

This Listing of Claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A device comprising:
 - an electroosmotic pump;
 - a particle separating channel having a first end and a second end, the particle separating channel at the first end being in communication with the electroosmotic pump;
 - a first electrode disposed proximate the first end of the particle separating channel;
 - at least one second electrode spaced apart the first electrode to maintain a first voltage;
 - a first pump channel connected to a first pump reservoir;
 - a second pump channel connected to a second pump reservoir, the first and second pump channels in communication with the first end of the particle separating channel;
 - a first pump electrode positioned in the first pump reservoir; and
 - a second pump electrode positioned in the second pump reservoir, wherein a voltage drop between the first and second pump electrodes causes electroosmotic flow in the first and second pump channels and convective flow in the particle separation channel; and
 - further comprising a sidearm with a pair of sidearm channel electrodes, the sidearm extending from and communicating with the first channel, wherein the sidearm is adapted to focus molecules into the sidearm by being of a shape selected from the group consisting of semi-circular, oblique parabolic segmental, sawtooth, and combinations thereof.

voltage, the second voltage to cause charged particles in a solution to migrate in the sidearm channel.

9. (Original) The device of claim 5, further comprising sieving media disposed in the sidearm channel.

10. (Original) The device of claim 5, further comprising a reservoir at the second end of the particle separating channel and a reservoir disposed on the end of the at least one sidearm channel distal to the particle separating channel.

11. (Previously Presented) A method comprising:
providing an electroosmotic pump;
forming a particle separating channel having a first end and a second end;
connecting the first end of the particle separating channel in communication with the electroosmotic pump;
disposing a first electrode proximate the first end the particle separating channel;
disposing at least one second electrode spaced apart the first electrode;
maintaining a first voltage between the first and second electrodes;
a first pump channel connected to a first pump reservoir;
a second pump channel connected to a second pump reservoir, the first and second pump channels in communication with the first end of the particle separating channel;
a first pump electrode positioned in the first pump reservoir; and

second voltage, the second voltage to enable an electric field to be applied to a solution disposed in the sidearm channel.

17. (Original) The method of claim 14, further comprising disposing sieving media in the at least one sidearm channel.

18. (Original) The method of claim 17, further comprising disposing a conductivity detector in the sidearm channels.

19. (Original) A system comprising:
a particle separating channel having a first end and a second end;
at least one sidearm channel in communication with the particle separating channel;
a first electrode disposed proximate the first end the particle separating channel;
at least one second electrode spaced apart the first electrode to enable a voltage gradient to be applied to a solution when the solution is disposed in the particle separating channel, the at least one of the second electrodes disposed proximate the at least one sidearm channel; and
an electroosmotic pump in communication with the particle separating channel at the first end, the electroosmotic pump creating convective flow in the particle separating channel to move the solution against the voltage gradient.

24. (Original) The method of claim 22, wherein applying an electric field gradient includes applying a linear electric field gradient.

25. (Original) The method of claim 22, further comprising detecting the charged particles in the at least one sidearm channel.